

AMENDMENTS TO THE CLAIMS:

1. (Canceled)

2. (Currently amended) A The-table management device according to claim 1, further using degraded data as address data, wherein the degraded data is produced from input data having a predetermined number of bits, the degraded data having a smaller number of bits, the table management device comprising:

a plurality of tables adapted to be concurrently accessed according to the degraded data, wherein each of the tables is adapted to register a predetermined number of pieces of data, each of the pieces of data having a number of bits equal to the predetermined number of bits of the input data;

a plurality of comparators provided for respective ones of the plurality of tables, wherein each of the comparators is adapted to compare the input data to a piece of data read from a corresponding table according to the degraded data to produce a comparison result;

a determiner for determining from comparison results of the comparators whether the input data has been already registered in the tables; and

a controller for controlling the tables such that, when the input data has not been registered in the tables and an available memory area exists in memory space of the tables concurrently accessed according to the degraded data, the input data is registered as new data in the available memory area of the tables.

3. (Canceled)

4. (Currently amended) The table management device according to claim 2, wherein each of the comparators ~~compares~~ is adapted to compare a corresponding piece of data to the input data to produce a comparison result indicating one of match and mismatch; and the determiner ~~determines~~ is adapted to determine that the input data has been registered in the

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tables when a match-indicating comparison result is received from at least one of the comparators, and ~~determines to determine~~ that the input data is not registered in the tables when a mismatch-indicating comparison result is received from each of the comparators.

5. (Canceled)

6. (Currently amended) A The method according to claim 5, further for managing an address table which is divided into a plurality of banks, the method comprising: the steps of:
converting input address data having a predetermined number of bits to address data having a smaller number of bits according to hash processing;
concurrently accessing the banks according to the address data to read registered address data from each of the banks;
comparing the input address data to the registered address data read from each of the banks to produce comparison results for respective ones of the banks;
determining from the comparison results whether the input address data has been registered in the address table;

e) ~~when~~ when the input address data has not been registered in the address table, determining whether an available memory area exists in memory space of the banks concurrently accessed according to the address data;

f) ~~when~~ when an available memory area exists, registering the input address data as new address data in the available memory area; and

g) ~~when~~ when no available memory area exists, changing the hash processing.

7. (Currently amended) The method according to claim 6, wherein, ~~in the step (a), in converting the input address data,~~ the hash processing is performed by selecting a desired number of bits at a predetermined position from 32-bit data obtained by CRC32 calculation.

8. (Currently amended) The method according to claim 7, wherein, ~~in the step (g), in~~
changing the hash processing, the hash processing is changed by selecting the desired number of bits at
another position different from the predetermined position from the 32-bit data obtained by the CRC32
calculation.

9. (Canceled)

10. (Currently amended) ~~A~~ The table management device according to claim 9, further
using a hash output value as an address, wherein the hash output value is obtained by converting an
input MAC (media access control) address based on a hash function, the table management device
comprising:

a MAC address table which is divided into a plurality of banks adapted to be concurrently
accessed using the hash output value as an address;

a plurality of comparators provided for respective ones of the plurality of banks, wherein each
of the comparators adapted to compare the input MAC address to a registered MAC address read from
a corresponding bank according to the hash output value, to produce a comparison result;

a determiner for determining from comparison results of the comparators whether the input
MAC address has been already registered in the MAC address table; and

a controller for controlling the MAC address table such that, when the input MAC address has
not been registered in the MAC address table and an available memory area exists in memory space of
the MAC address table accessed according to the hash output value, the input MAC address is
registered as a new MAC address in the available memory area of the MAC address table.

11. (Currently amended) The table management device according to claim-9 10, wherein
each of the comparators ~~compares~~ is adapted to compare a corresponding registered MAC

address to the input MAC address so as to produce a comparison result indicating one of match and mismatch; and

the determiner ~~determines~~ is adapted to determine that the input MAC address has been registered in the MAC address table when a match-indicating comparison result is received from at least one of the comparators, and determines that the input MAC address is not registered in the MAC address table when a mismatch-indicating comparison result is received from each of the comparators.

12. (Currently amended)

13. (Currently amended) A The method according to claim 12, further for managing a plurality of tables, the method comprising: the steps of:

converting input data having a predetermined number of bits to degraded data having a smaller number of bits according to a predetermined algorithm;

concurrently accessing the plurality of tables according to the degraded data to read registered data from each of the tables;

comparing the input data to the registered data read from each of the banks to produce comparison results for respective ones of the tables;

determining from the comparison results whether the input data has been registered in the tables;

e) when when the input data has not been registered in the tables, determining whether an available memory area exists in memory space of the tables concurrently accessed according to the degraded data; and

f) when when an available memory area exists, registering the input data as new data in the available memory area.

14. (Currently amended) The method according to claim 13, further comprising: ~~the step~~

of:

~~g) when no available memory area exists,~~ changing the predetermined algorithm when no available memory area exists.

15. (Currently amended)

16. (Currently amended) A The computer program according to claim 15, further comprising the steps of: for use in a computer to manage a plurality of tables, the program, when activated, causing the computer to:

convert input data having a predetermined number of bits to degraded data having a smaller number of bits according to a predetermined algorithm;

concurrently access the plurality of tables according to the degraded data to read registered data from each of the tables;

compare the input data to the registered data read from each of the banks to produce comparison results for respective ones of the tables;

determine from the comparison results whether the input data has been registered in the tables

~~e) when when~~ the input data has not been registered in the tables, ~~determining~~ determine whether an available memory area exists in memory space of the tables concurrently accessed according to the degraded data; and

~~f) when when~~ an available memory area exists, ~~registering~~ register the input data as new data in the available memory area.

17. (Currently amended) The computer program according to claim 16, ~~further comprising the step of:~~ wherein the program, when activated, further causes the computer to:

~~g) when no available memory area exists,~~ changing ~~change~~ the predetermined algorithm when no available memory area exists.

18. (Canceled)

19. (Currently amended) ~~A The computer system according to claim 18, wherein the program further comprises the steps of:~~ comprising:
a plurality of tables; and
a processor on which a program is to run,
wherein the program, when activated, causes the computer to:
convert input data having a predetermined number of bits to degraded data having a
smaller number of bits according to a predetermined algorithm;
concurrently access the plurality of tables according to the degraded data to read
registered data from each of the tables;
compare the input data to the registered data read from each of the banks to produce
comparison results for respective ones of the tables;
determine from the comparison results whether the input data has been registered in the
tables;
e) when when the input data has not been registered in the tables, determining
determine whether an available memory area exists in memory space of the tables concurrently accessed
according to the degraded data; and
f) when when an available memory area exists, registering register the input data as
new data in the available memory area.

20. (Currently amended) The computer system according to claim 19, wherein the program, ~~further comprises the step of:~~ when activated, further causes the computer to:
g) when no available memory area exists, changing change the predetermined
algorithm when no available memory area exists.

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21. (Canceled)